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OBSERVATIONS OF 194 DOUBLE STARS.

My double-star observing-list for the years 1900 and 1901 was made up largely of the more rapid binaries and other difficult pairs taken principally from the catalogues of BURNHAM, HOUGH, and the CLARKS.

About six hundred measures of one hundred and ninety of these stars, besides notes on four that were found to be single, have been published as Bulletin No. 11 of the Lick Observatory. Of the measured pairs, ninety-four have distances of 0″.5 or less, including some of the closest pairs known; forty-two more have distances ranging from 0″.5 to 1″.0, and, of the wider pairs, many are difficult, by reason of the faintness of the smaller star. The great majority of the measures were made with the 36-inch telescope.

The double-star system that is of greatest interest at present is δ *Equulei* = OΣ 535. My observations of this pair made in 1900 were printed in No. 76 of these *Publications*, and the first two secured in 1901, in No. 79. In May, June, and July measures were made without special difficulty, the angular separation of the components reaching a maximum of about 0″.15.

During September and October the apparent distance between the two components again began to grow smaller and measures became more difficult. The star was followed carefully as long as it was in reach, the last observation being made on December 19th. On that date, the highest power eye-piece for the 36-inch telescope showed no certain elongation. The seeing was very good. These observations, confirmed as they are by those made by Professor HUSSEY, seem to present conclusive evidence in favor of the 5.7-year period of revolution. It is certain that the companion moved out to elongation and in again in little more than a year's time.

R. G. AITKEN.

January 15, 1902.

DUPLICITY OF THE PRINCIPAL COMPONENT OF Σ 238.

A recent examination of this pair with the 36-inch telescope revealed the existence of a close companion to the brighter star. The mean of three nights' measures is:—

1902.00 108°.1 0″.85 8.3 - 10.7

My measure of the Struve pair is —

1901.970 356°.9 10″.83 1^{n}

which agrees almost exactly with STRUVE'S measure made in 1830, showing that the wide pair is fixed.

R. G. AITKEN.

January 15, 1902.